

# **Disruptive Ed-Tech: Mobile Technology Invasion of the Classroom**



**Joe Bustillos - Full Sail University**





# Joe Bustillos - Full Sail University

## Professor EMDT Masters Degree Program

<http://disruptive-ed-tech.com>



## Disruptive Ed-Tech: Mobile Technology Invasion of the Classroom

2

I'm Joe Bustillos, I'm a professor at Full Sail University in their online Education Media Design & Technology masters program working with educators wanting to move their instruction into this media rich era.

Previously I was an educator in Southern California, working 13-years as a 6th grade teacher, school-site technology coordinator, computer lab teacher and middle-school computer lab survivor.

And there's a picture of my blog. You will find this presentation and the resources at the URL listed here: <http://disruptive-ed-tech.com>



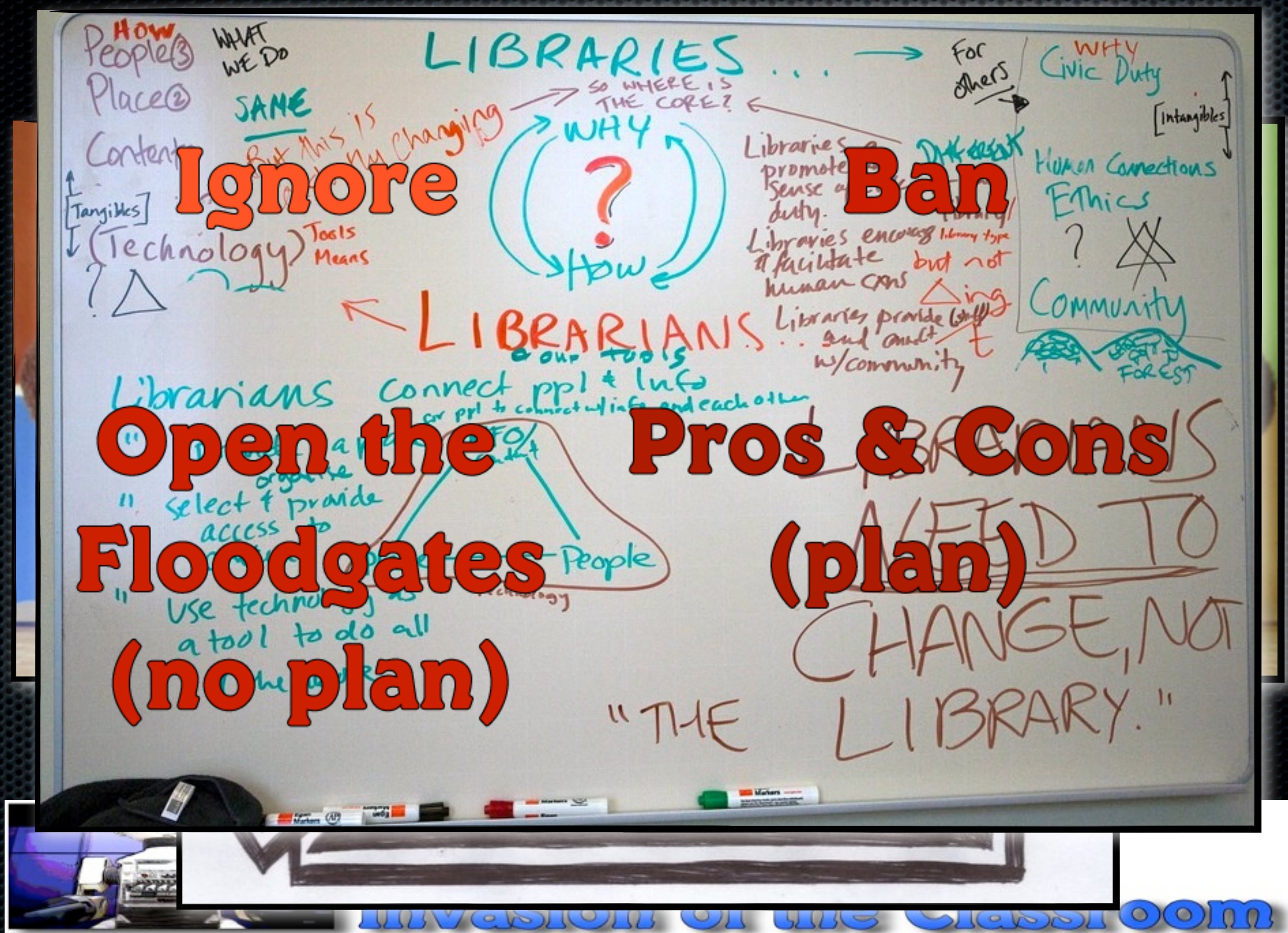
**Anyone question that we are  
experiencing a mobile tech  
invasion?**



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Mobile Technology  
Invasion of the Classroom**



# Four Possible Reactions:



Four reactions:

1. Denial – nothing going on here.
2. Ban – We don't understand it, it's not part of our experiences, it's bad, BAN IT!
3. Okay, something's going on here – every man for himself – open the flood gates!
4. Something's going on here – how can we use this to our advantage?

We want to be in the fourth group. We may not feel like we have any options, but I've learned that there are always options. We just want to avoid the ones that get us in more trouble than they're worth.



**So... Now what...?**

**Five Principles  
When Planning  
for Change in  
Ed/Tech**



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Mobile Technology  
Invasion of the Classroom**

So having a good plan is essential. We know something is happening. We want to try to take advantage of this possible change... here are five principles that we need to keep in mind as we plan for this change...



**No program or technology is more valuable than the people you are working with**



**Disrupt  
Mobile  
Invasio**



No one likes being told what to do. The best, most important resource is the other person you are working with. People not machines. I know sometimes the people can be a real problem. Alas, I've been in programs where the coordinator more or less told the staff that we were going to change everything and that they needed to throw away how they used to do it and do it in a new way. Little wonder after one year one-third of the staff left for other assignments.

In the classroom there is nothing that is more important than the years of experience that your colleagues have accomplished. Help them find and remember the gems that they can bring to the change that you are planning for. With students there is even great potential if we can find the thing that used to motivate them. Work with them to move them from the old to the new.

Also, this means when working with those above you in the organization, you need to make your plan advantageous to their needs and not just the needs of your subordinates. While it should seem to be enough that you've found a way to do your job better by doing this thing, you need to make it sound like you're making it easier for him or her above you to do their job.



**There is no  
one single  
solution -  
one size  
does not fit  
all**



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Pretty self-explanatory, unless you are responsible for a whole school-site or district or bigger. Where ever the change is being expected to happen leave room for meaningful variation. Education is one of the most human of enterprises and we humans do not like being reduced to what worked somewhere else. Let us own the process by letting us have meaningful applications of our own understanding of the intended changes.





**Change  
requires  
both added  
time &  
energy -  
don't over-  
extend**



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8

Education is notorious for putting all of the focus on face-to-face time with students as being the only real working time. It's all the more difficult when under that kind of pressure and then trying to make changes in how you do things. When I was working on one of my school's three-year Magnet school grants, we needed to go from an un-networked school of thirty classrooms with one unused mac to a completely networked school with five to seven macs in every classroom, plus a new 30-station mac lab and brand-new video-journalism studio, I said that the experience was akin to working on the transmission of a car while driving over 70 miles per hour (and running late, at that).

When planning for change give yourself enough time to be able to have ongoing cycles to regain your energy so that you can be successful.



**There are more of them than you, find a solution where that is an advantage**



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9

This is a tough one, but anything that harnesses the energy of your students and moves them in a direction that serves the main purposes of the class is a good thing. This does push against the concepts of control and mastery. All I can say is sometimes its much more effective and easier to be the passionate coach than the iron-fisted dictator.





**Change is best when it is organic, simple and value-add, versus tacked-on and just another thing**



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Change needs to make practical sense to those responsible for it succeeding. It's a process that needs to come FROM those making the changes. If it feels at all tacked-on or peripheral to those responsible for doing it, then it will receive partial energy, at best.



# Building a Framework to Take Advantage of the Mobile Technology Invasion

**#1: People 1st**

**#2: No 1 Solution**

**#3: Time & Energy**

**#4: One v Many**

**#5: Organic**

✦ **Assets**

✦ **Time Frame**

✦ **End (Learning) Goal(s)**



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Mobile Technology  
Invasion of the Classroom**

11

So, using the five principle highlight we should be able to develop a framework upon which to plan out how we will address this problem of mobile technology invading our classrooms. Not to insult anyone's intelligence, but this problem shouldn't be any different than any other problem facing educators on a daily basis. Rather than finding ourselves in the disadvantaged position of only reacting, we can treat this like any other problem, like students not doing homework or disruptive talking in the classroom, and come up with a framework or strategy to use this invasion to our advantage.

Step 1 is to figure out what assets we have... in this case what kind of technology do your students carry with them when they walk into your room and what other solutions might there be available to you? What do you have access to or can get access to.

I was amazed in the mid-90s when I visited a 5th grade teacher who had gathered enough Apple IIs, computers that were being tossed or were available for very little money and set up his class so that every student had a monitor and keyboard and he connected the monitors to a video camera he'd set up at the podium so that all his students had a "front seat" view of whatever he was demonstrating and they could do their classwork via the keyboards.

So what do you have to work with, that's step 1.

Step 2 is figuring out how much time you want to spent on this. Is this something that can be done in a single lesson or is it something that you need to build up to. Thinking about time is a way to remove as much anxiety as possible when doing something new. How much time is it going to take to figure out your assets, how much time is going to be needed to figure out what can be done with the available resources, how much time needed to conduct pilot experiments, when do you want to begin trying out using the resources, how much time to do the whole project? Carefully considering time is essential to keeping down the anxiety as much as possible.



# **Bad Example: Text Message Haikus: A SmartMob Experiment**

**Beware of  
Solutions  
Looking for  
Problems**



<http://www.youtube.com/watch?v=SO5Am6Lt5E&feature=g-upl&context=G27ee3c1AUAAAAAAAAUA>



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Mobile Technology  
Invasion of the Classroom**

12

In 2004 I was working with several Pepperdine classmates, we'd read Howard Rheingold's book, Smart Mobs, and we want to experiment with the possibility of doing the ridiculous thing of trying to use cell phones as part of a lesson. In fairness to my friends, the eighth graders were able to write haikus about nature on their phones and text the results to the educator running the experiment, so we were successful with our experiment, but as for a day-to-day in the classroom kind of thing it felt too much like a solution looking for a problem and not something particularly practical when needing to work with 30 or more students at a time. I can only imagine to those students who were using phones without texting plans, I'm sure their parents were disbelieving when the students tried to explain that this was all part of a school project. Right.



# Good Example: Audubon Park Elementary: Bring Your Tech Program

**Started with:**

- **Interactive**

**Promethean Boards,**

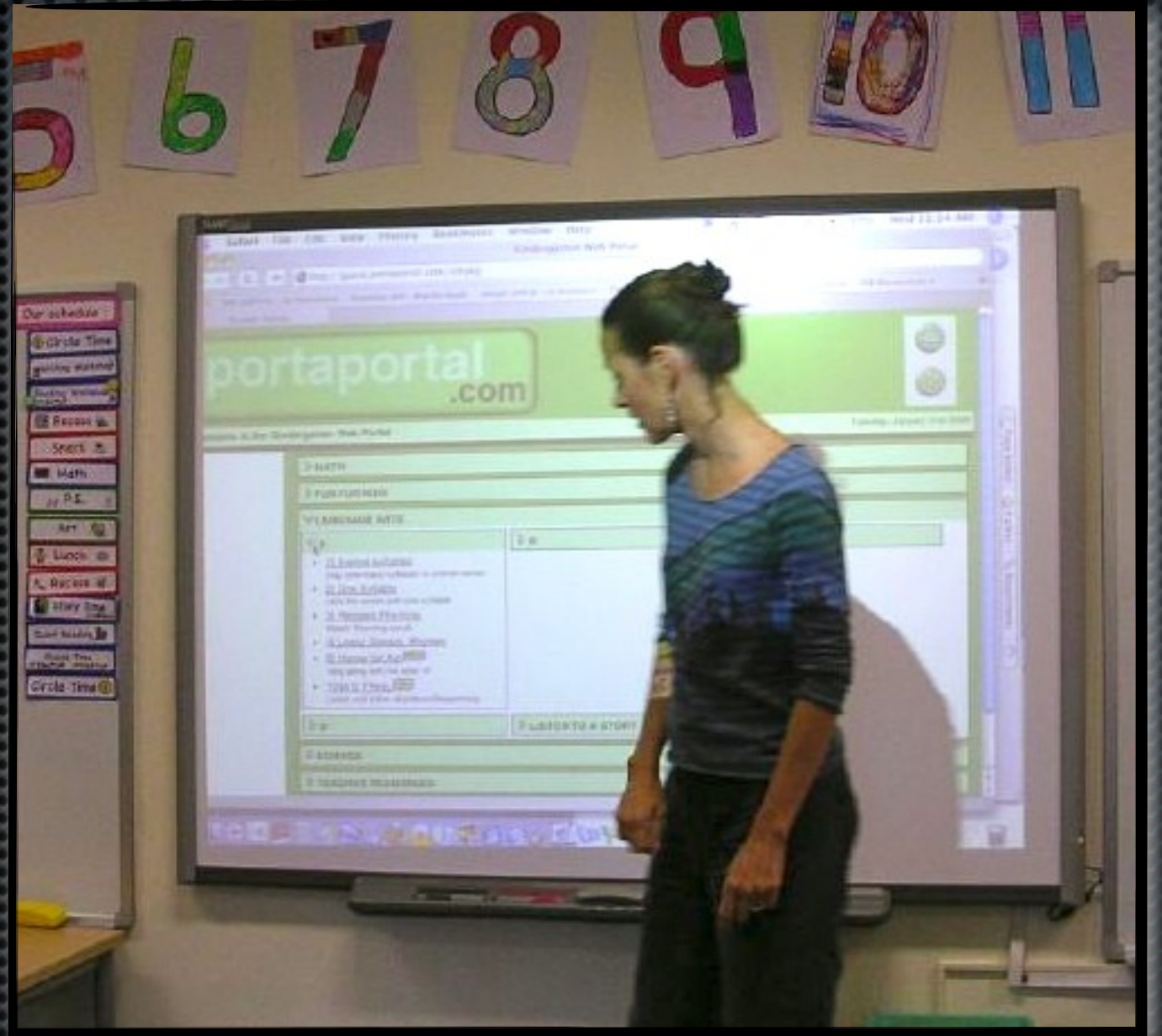
- **engaged students,**

- **happy parents,**

- **staff buy-in**

- **more tech**

- **repeat**



<http://josephbustillos.com/2012/01/17/what-does-a-tech-savvy-21st-century-school-look-like/>



## Disruptive Ed-Tech: Mobile Technology Invasion of the Classroom

13

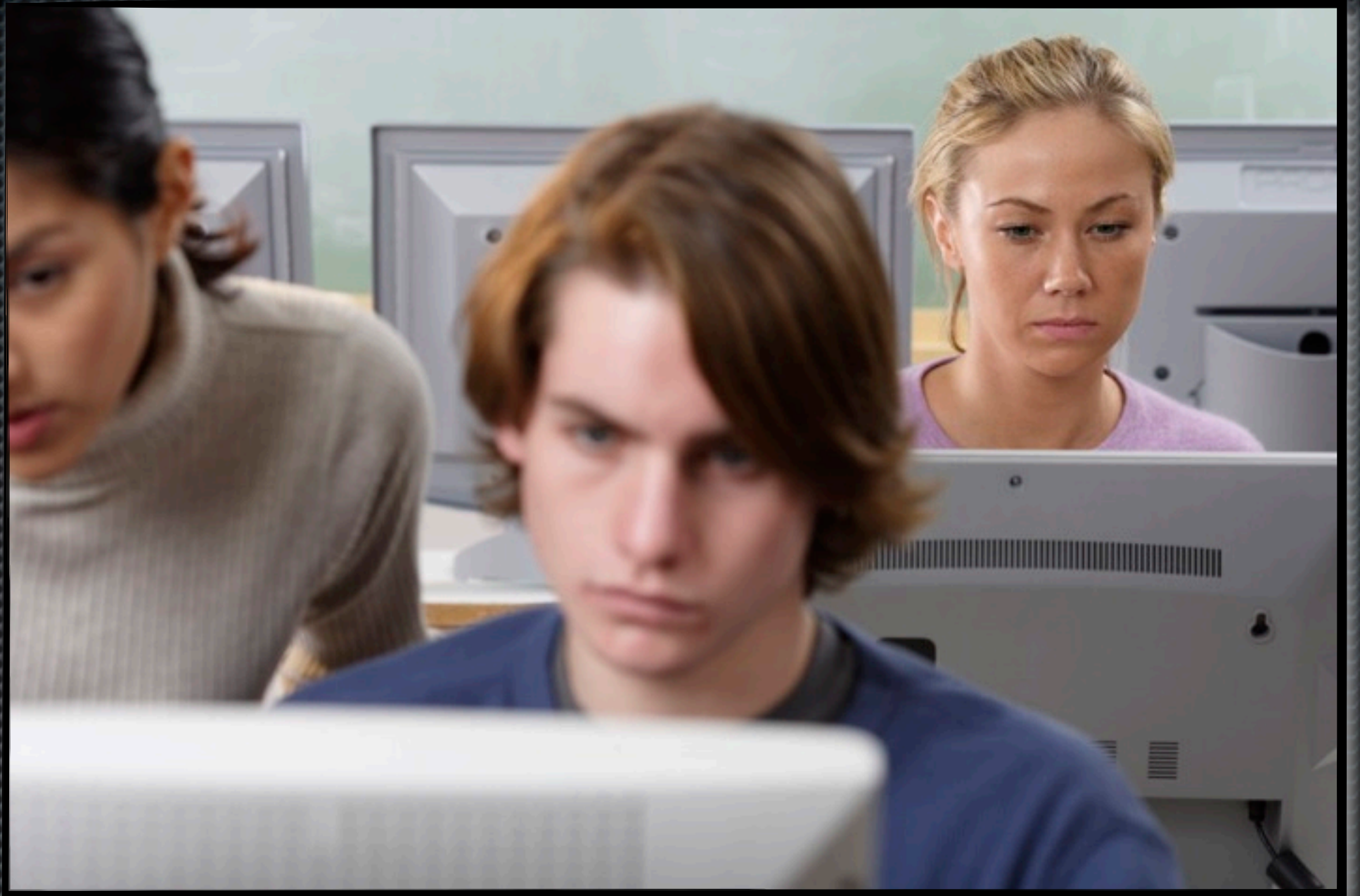
One of the many perks of my job at Full Sail University/EMDT program is we frequently get to work with great schools and great educators who want to make a difference serving their communities. Sitting at lunch one afternoon I heard from a colleague about a local elementary school where the students sit on yoga balls and work on netbooks or are welcomed to bring e-readers and iPads from home to do their work. I had to check the school out and what I saw confirmed my suspicions about what such a school might look like.

When Assistant Principal Bryan Dolfi took me around Audubon Park Elementary in the comfortable community of Baldwin Park near Orlando I did not find a shrine to technology. In fact the first thing that struck me as I observed one room where the teacher was doing a reading lesson with a group of students around a horseshoe table was that this just looks like a good school where students were actively engaged in their learning. In another classroom the teacher stood in the back of the room reviewing a science unit projected on the front of the room and students actively offered their responses to her prompts. And yes, there were classrooms with students sitting at tables of four contentedly bouncing on yoga balls while they worked on their netbooks. Technology was so embedded in the classroom practice that it was virtually invisible.

The K-5 school of 1,150 students had been at its current site for five-years and they were in the second year of their BYOD/Interactive education program. I asked Dolfi what was it that motivated the school's Principal, Trevor Honohan, to make the investment in time and money to attempt the program they were developing. Dolfi said that some Promethean Interactive boards had been installed and Honohan noted how the level of engagement improved in those classes. So he started looking for ways to get the boards into more classrooms and with the better level of engagement came greater parental support. Greater parental and community support turned into community fundraisers to add netbooks to the classrooms and eventually a writing lab with iPads was created. I had heard that they had chosen to do the local fundraising



# What Does the Community & Research Say?



## **Disruptive Ed-Tech: Mobile Technology Invasion of the Classroom**



# What Does the Community & Research Say?

Winter 2005:  
When Palm  
PDAs Ruled  
the World

FEATURE 13

by Sara Armstrong

## STUDENTS STRIKE GOLD

RURAL TEACHER OF THE YEAR PROMOTES HANDHELDS FOR ALL STUDENTS

**W**hen Jon Corippo won the Foundation for Rural Education Development (FRED) teacher of the year award in 2003, he knew exactly how he was going to spend the \$5,000 prize.

Jon, a sixth grade language arts and history teacher at Coarsegold Elementary School near Yosemite, wanted to bring PDAs to his students to enhance their learning in all subject areas.

An initial purchase of ten Palms was made, including keyboards, a printer, and software, and the little handhelds were loaned out to students. They had to be able to type, and Jon's co-teacher, Tracey Hurd, who covers math and science, assigned a science report using a template developed for the purpose. Jon says they used the scientific method: by requiring that the students prepare their reports in class, variables could be limited, and he and Tracey could watch the kids improve in their work.

Next came reports students developed on ancient Greece and ancient Rome — which took less time than usual because of the accessibility offered by the Palm.

Jon found that when parents in his low to medium income district "understood that it was a multi-year program that would get kids ready for high school," they started purchasing Palms for their children — particularly when Jon offered to provide technical support. During the first year of the project, 85 percent of his students got their own Palms.

In the project's second year, 90 percent of Jon's students used the Palms, and they became Palm ambassadors, sharing what they were doing with other students, including high schoolers. This year, there will be more work on the Palms, and more sharing with other schools.

Jon hopes that California will mandate digital media rather than textbooks. "Imagine a day," he remarks, "when a district buys a kid a Palm for \$130, with all their texts on it. All their base reading is on it, they can change fonts, annotate, scroll through on the fly. Imagine kids being able to do annotation in fourth and fifth grade!" In Jon's dream, textbook publishers save on the postage of mailing heavy textbooks throughout the state, and simply charge a service fee for updating their material and supplying new DVDs every year. ☺

Jon Corippo <jcorippo@coarsegoldusd.com> is a classroom teacher devoted to using Palms in instruction.

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Coarsegold Elementary School sixth graders use handheld computers for writing, social studies, science, and math.



15

In OnCUE, Winter 2005, When Palm PDAs Ruled the World. I love this issue. It's not that long ago but it seems like it was. Besides the CUE publication being mostly in Black & White, this was three-years before the introduction of the iPhone and iOS.

In this issue Kevin Silberberg, writes about the Palm PDAs as portable tools for anecdotal observations, with specific palm applications created to tally observations. (page 10)

There was an article about KIPP schools giving cell phones to their teachers so that they could have instant connection with their students and their students' families. Here's a disruptive use of technology that's meant to bridge the gap between educators and our students. KIPP school are also know for having much longer school days. I guess if you are going to reverse the downward spiral you can't expect it to happen without serious re-evaluation of what its going to take to get the job down. Cell phones, not banned. (page 14)

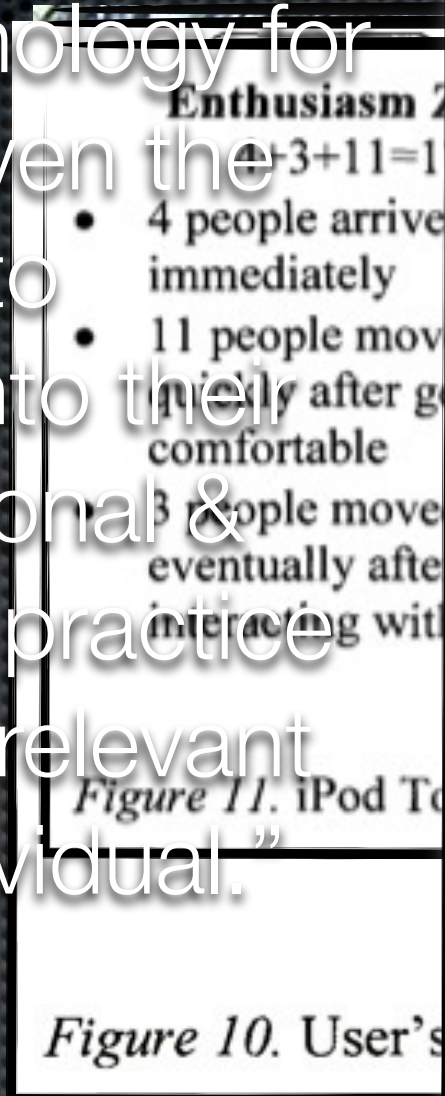
There are several articles but the one that stuck out to me was the article about a sixth grade teacher, Jon Corippo, who took his \$5,000 FRED prize to purchase 10 Palm PDAs with keyboards, a printer and software. From this beginning He and co-teacher, Tracey Hurd was able to create a multi-year program and when parents in his medium to low SES community, saw the level of student engagement 85% purchased PDAs for their children in the first year and 90% in the second year. Hmmm, student engagement leading to parent support leading to expansion of technology usage in the classroom... where have I heard this before?

At the end of the article Corippo talks about hoping that California will get on board and support digital media instead of paper textbooks, saying: *"Imagine a day, when a district buys a kid a Palm for \$130, with all their texts on it. All their base reading is on it, they can change fonts, annotate, scroll through on the fly. Imagine kids being able to do annotation in fourth and fifth grade!"* Dreamer. I wonder what they will be saying about us in 2017. Oh boy. (page 13)



# What Does the Community & Research Say?

Dr. Nancy Jefferson Smith  
Conclusion:  
or Just a Toy? Inductively  
... the majority of  
Use of Mobile Learning  
adult learners enjoy  
mobile technology for  
2010 Study  
learning if given the  
of 25  
opportunity to  
Doctoral  
integrate it into their  
students  
own educational &  
given iPod  
professional practice  
Touches to  
in a manner relevant  
track  
for each individual.  
attitudes &  
usage



16

I put out a call to my Facebook/Twitter/Google-Plus friends about mobile technology and I was happy to be contacted by fellow Pepperdine alum, Nancy Smith telling me that she'd just completed a study for her doctoral dissertation during which 25 fellow doctoral students were given iPod Touches and after one-hour of training and computer set-up were told to use the devices in their Qualitative Methods course and were encouraged to use them for their personal use.

One element that I found interesting in Smith's study was that it was set up to be an inductive study, going from observation, looking for patterns towards a tentative hypothesis, leading to a theory. It wasn't a study to justify the use of technology. She wanted to see the pattern of adoption and integration, who would immediately be comfortable with the new technology and who would be resistant.

She created a chart representing the movement of users toward what she called the Enthusiasm Zone, the Negative Zone and the Tension Zone (figure 10).

Upon distribution four participants immediately moved to the Enthusiasm Zone, three moved to the Negative Zone and the remaining 18 landed in the Tension Zone (figure 11). Once they became more comfortable 11 participants quickly moved from the Tension Zone to the Enthusiasm Zone. Then after interacting with their peers three more moved from the Tension Zone to the Enthusiasm Zone. During this time four moved around in the Tension Zone but eventually ended up in the Negative Zone. The three who moved immediately to the Negative Zone never left. At the end of the study there were 17 in the Enthusiasm Zone and Seven in the Negative Zone. Smith felt like, given more time the four that had moved from the Tension Zone to the Negative Zone might have moved to the Enthusiasm Zone.

Smith felt that it was important to recognize that these learners come to this new experience



# What Does the Community & Research Say?

December 2011:  
What Can You  
Do with Just  
One iPad



17

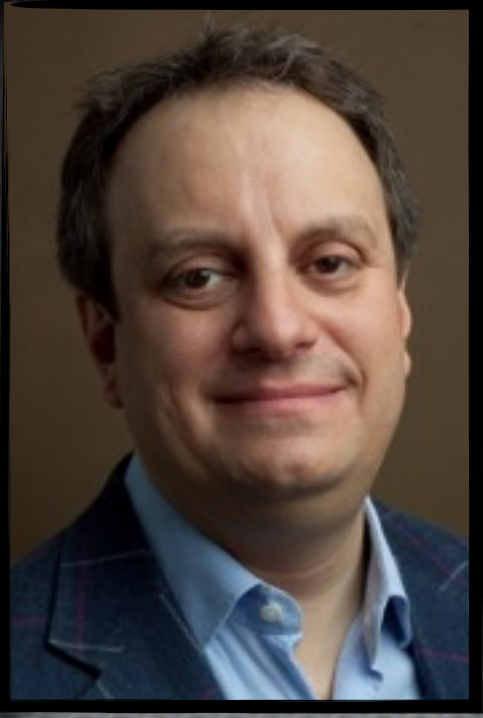
In Learning and Leading for December 2011 Kristin Redington Bennett writes about how to work with classroom technology, even when you don't have enough for everyone. She begins with an assessment of your resources and goes to the long standard Centers, Partners or Trios strategy. And if you are limited to only having a single iPad, and I'm assuming this works for any tablet device, there's no reason why you can't use it while walking around the classroom observing and instructing using the device as a digital clipboard.

Bennett finishes up with recommendations to make sure to establish classroom rules and expectations when using the technology, organize the apps, use the school's wireless (so that you can use the firewall), and think outside the apps to creatively stretch the technology.

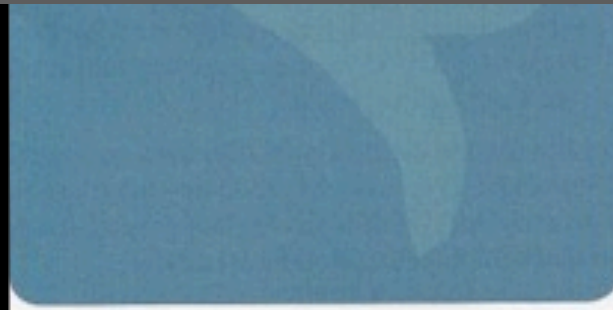
Nothing here that one wouldn't expect with any classroom activity or lesson: plan, double-check the plan, work with your students and stay flexible. iPad or less than a class set... we've been making adjustments since... well, since the beginning of time (or 2005, depending on your age).



# What Does the Community & Research Say?



- ✖ BYOD enshrines inequity
- ✖ BYOD creates false equivalencies between any object that happen to use electricity
- ✖ We should not make important educational decisions based on price
- ✖ BYOD narrows the learning process to information access and chat
- ✖ BYOD increases teacher anxiety
- ✖ BYOD diminishes the otherwise enormous potential of educational computing to the weakest device in the room
- ✖ BYOD contributes to the growing narrative that education is not worthy of investment



Gary S. Stager

This is particularly problematic in a society with growing economic disparity.  
*BYOD creates false equivalencies between any objects that happen to use electricity. Repeat after me! Cell phones are not computers! They may both*



18

Then Friday the latest issue of Learning & Leading (volume 39 number 5 for those of you keeping score) showed up at my doorstep and I was delightfully presented with the challenge of having part of my topic, BYOD brought to the fore. So, I'd like to take a moment to address Dr. Gary Stager's objections to BYOD.

Dr. Stager was my professor when I was getting my master's degree at Pepperdine and he's pretty well-known for having strong opinions about what's wrong with how education has been managed over the past several decades. Dr. Stager knows well of what he preaches, having been associated with the legendary Seymour Papert.

You may well know all of this, so I apologize if I'm preaching to the choir, but in the early days when micro-computers were entering the classroom MIT and Papert studied the potential and in those early days determined that technology, due to its expense in time, support and money, needed to deliver more than what was being promoted: stand-alone drill and kill stations. What they figured out was that if they taught students computer programming then they would be teaching students three fundamental skills: communication, problem-solving and creative thinking. In those early days the vision was to use computers to add to the educational experience in ways that weren't easily doable without computers. Alas, the technology market has tended to dumb-down its potential in the classroom in search of faster, smaller, cheaper devices, forgetting the vision of Papert.

So, let me address Stager's objections:

**\* BYOD enshrines inequity: Only way to guarantee equitable educational experiences requires same access for all students...** Policy versus Practice: We want every student to have the same access, if BYOD were the only option then, yes, we're dealing with "separate but equal" foolishness. There's a difference between allowing for and supporting versus BYOD as the only option



# Building a Framework to Take Advantage of the Mobile Technology Invasion

**#1: People 1st**

**#2: No 1 Solution**

**#3: Time & Energy**

**#4: One v Many**

**#5: Organic**

✦ **Assets**

✦ **Time Frame**

✦ **End (Learning) Goal(s)**



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Mobile Technology  
Invasion of the Classroom**

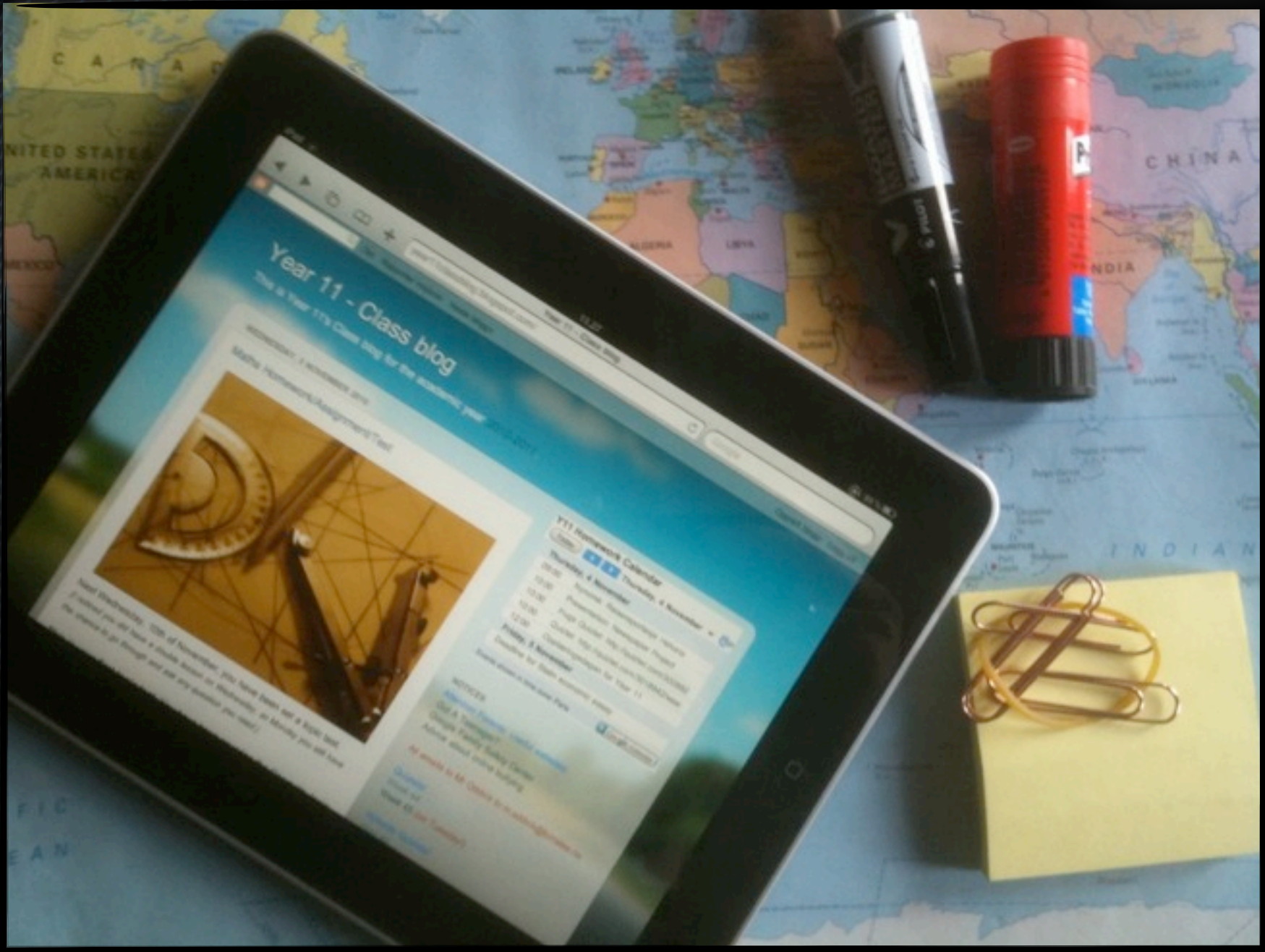
You can take advantage of this invasion with careful planning, keeping the end goal in mind and staying aware of the five principles that I've laid out.



# One Final Thought:



The force for change & the expense of tech pushes us to reveal what we really believe Education should look like...



## Disruptive Ed-Tech: Mobile Technology Invasion of the Classroom

Like my discovery when I visited the netbook using yoga-ball school in Baldwin Park, this isn't at all about technology but about the future of education.



# References:

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Mobile Technology  
Invasion of the Classroom**



## Images:

- Slide 1: Invasion! By Marcin Wichary <http://www.flickr.com/photos/mwichary/4141370417/> retrieved 1/22/2012
- Slide 1: ipad and moleskin.jpg by dtl , <http://mrg.bz/9pcBxR> retrieved 1/22/2012
- Slide 2: Program Decal - EMDT, the hangr - Full Sail Apparel, [http://hangr.fullsail.com/products/Program\\_Decal\\_EMDT-49-40.html](http://hangr.fullsail.com/products/Program_Decal_EMDT-49-40.html) retrieved 1/22/2012
- Slide 2: Furgeson Academy of Communication & Technology (FACT) Teacher Training by Joe Bustillos, circa 1998
- Slide 2: JosephBustillos.com Blog Landing Page by Joe Bustillos, <http://josephbustillos.com> retrieved 1/22/2012
- Slide 3: Microsoft Office Clipart: <http://office.microsoft.com/en-us/images/results.aspx?qu=classroom%20technology&ctt=1#ai:MP900422528|mt:2> retrieved 1/22/2012
- Slide 4: Speak no evil, See no evil, Hear no evil - By Rose Robinson, <http://www.flickr.com/photos/rosedavies/110850792/in/photostream/> retrieved 1/22/2012
- Slide 4: Cell Phone - By Mike "Dakinewavamon" Kline <http://www.flickr.com/photos/mikekline/384589883/> retrieved 1/22/2012
- Slide 4: Krasnoyarsk hydroelectric plant spillway By sashapo (Alex Polezhaev) <http://www.flickr.com/photos/sashapo/4745280047/> retrieved 1/22/2012
- Slide 4: White Board Wiki - Planning for the Future - Last "Slide" - By jblyberg (John Blyberg) <http://www.flickr.com/photos/jblyberg/3395249228/> retrieved 1/22/2012



**Disruptive Ed-Tech:  
Mobile Technology  
Invasion of the Classroom**



## Images, continued:

- Slide 5: Young boy bored in school - microsoft office clipart, <http://office.microsoft.com/en-us/images/similar.aspx#ai:MP900439553> retrieved 1/22/2012
- Slide 6: microsoft office clipart, <http://office.microsoft.com/en-us/images/similar.aspx#ai:MP900422135> retrieved 1/22/2012
- Slide 7: OLPC in Osmosoft - By Phillie Casablanca (Phil Whitehouse), <http://www.flickr.com/photos/philliecasablanca/2038307398/> retrieved 1/22/2012
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- Slide 11 & 19: Kindle 3 By kodomut (Zhao !) <http://www.flickr.com/photos/kodomut/5145393829/> retrieved 1/22/2012
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- Slide 14: microsoft office clipart, <http://office.microsoft.com/en-us/images/results.aspx?qu=classroom%20technology&ctt=1#ai:MP900422589|mt:2> retrieved 1/22/2012



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Mobile Technology  
Invasion of the Classroom**



## Images, continued:

- Slide 16: I got my iPod Touch ....DSC04074 <http://www.flickr.com/photos/santarosa/3177771778/> retrieved 1/22/2012
- Slide 16: You can have my iPod - By jerine (Jerine Lay) <http://www.flickr.com/photos/jerine/2444781987/> retrieved 1/22/2012
- Slide 18: Gary S. Stager, [http://stager.tv/blog/?page\\_id=2](http://stager.tv/blog/?page_id=2) retrieved 1/22/2012
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- Slide 18: Walter Bender, <http://one.laptop.org/about/people/walter-bender-0> retrieved 1/22/2012
- Slide 20: Teacher's Desk By mortsan (Morten Oddvik) <http://www.flickr.com/photos/mortsan/5145386791/> retrieved 1/22/2012
- Slide 25: Kindle 3 By kodomut Zhao ! <http://www.flickr.com/photos/kodomut/5145351281/> retrieved 1/22/2012



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**Joe Bustillos - Full Sail University**  
**Professor EMDT Masters Degree Program**  
**<http://disruptive-ed-tech.com>**



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